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TECHNICAL MEMORANDUM

TO: Beth Guymes
United States Army Corps of Engineers

FROM: Brown and Caldwell
Elisabeth Benjamin, P.W.S., and Dale R. Showers, P.E.

RE: Grenada Site Wetland Delineation and Permit Strategy

DATE: August 8, 2002

Brown and Caldwell is currently assisting ArvinMeritor, Inc. in performing tasks concerning the RCRA Facility Investigation (RFI) Report and the design of the groundwater Interim Measure at the Grenada Manufacturing facility located at 635 Highway 332 in Grenada, Mississippi. The groundwater Interim Measure will consist of a permeable reactive barrier, a subsurface trench filled with a mixture of iron filings and sand, to passively treat impacted groundwater upgradient of Riverdale Creek. The Interim Measure is required by the United States Environmental Protection Agency (USEPA) to be protective of waters of the United States (i.e., Riverdale Creek). In connection with this requirement, Brown and Caldwell (BC) performed a wetland delineation of the proposed location of the permeable reactive barrier on January 23 and 24, 2002. Brown and Caldwell also has completed a desktop study to determine whether there are any threatened and endangered species in the area of the facility. At the USEPA's request, a field survey also will be conducted prior to beginning construction of the Interim Measure, to confirm the absence of any threatened and endangered species in the project area.

This memorandum describes the conditions of the project area, delineates wetlands in the proposed location of the permeable reactive barrier, discusses Brown and Caldwell's permitting strategy and outlines planned next steps.

SITE CONDITIONS

Brown and Caldwell is providing ArvinMeritor, Inc. with technical support in identifying wetlands at the Grenada Manufacturing facility. The site visit and wetland delineation were conducted by Ms. Elisabeth Benjamin, P.W.S., Brown and Caldwell. The plant site location is highlighted on Figure 1. The location of wetland areas that meet jurisdictional criteria are identified on Figure 4.

Methodology

Brown and Caldwell reviewed key information prior to the site visit to determine the existing conditions on site. The references reviewed included:

- Aerial Photograph (1996)

- U.S.G.S. Topographic Maps (1983)
- Natural Resource Conservation Service's Wetland Plant List for Region 2
- National Wetland Inventory Map for the Area (Grenada Quad)
- Soil Survey Information (Grenada County)

The purpose of the site visit, conducted on January 23 and 24, 2002, was to: (1) identify wetlands and other "waters of the United States"; (2) document site conditions; and (3) stake the wetland boundary. The wetland boundaries in the study area were delineated using the routine field methods described in the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual (USACE 1987). Based on this manual, wetlands are areas with positive indicators of wetland vegetation, soils, and hydrology. Other "waters of the United States" regulated under Section 404 of the Clean Water Act were also identified.

One upland data point and one wetland data point were established along various portions of the wetland boundary to document plant, soil, and hydrologic conditions. An approximation of the percent cover of herbaceous vegetation by species was recorded based on a 5-foot radius. Percent cover shrub and sampling species were recorded for a 15-foot radius. Soil observations were made using a soil sample collected from 0 to 18 inches and recorded. Depth of saturation and inundation or other hydrology indicators were noted. All hydrologic data observed also were recorded.

The data review and site visit resulted in the wetland delineation summarized below.

Findings of Review

The U.S.G.S. 7.5 minute Quadrangle map for the area was reviewed prior to the site visit. The U.S.G.S. map indicates a stream flowing through the northern portion of the site. This stream is depicted on Figure 1. This stream is Riverdale Creek, which is a tributary of the Yalobusha River. The U.S. Army Corps of Engineers considers Riverdale Creek "waters of the U.S." and "waters of the state," and takes jurisdiction over such areas.

The U.S. Fish and Wildlife Service's National Wetland Inventory (NWI) maps were reviewed prior to the site visit to determine the potential presence or absence of wetlands. The NWI maps were created by photointerpretation of aerial photographs. The NWI maps for the subject site highlighted two potential wetland areas as shown on Figure 3.

The soil survey for Grenada County, Mississippi also was reviewed. In general, the soils of the project site are characterized by the Falaya-Collins-Waverly Association. These soils are defined as well-drained to poorly-drained silty soils formed in recent alluvium from the Yalobusha River and other streams.

Site Visit Findings

A site visit was conducted on January 23 and 24, 2002 to delineate wetlands at the Project Site. The site map is included as Figure 2. The subject property is bordered to the northwest by Riverdale Creek, a tributary to the Yalobusha River, and to the southeast by Route 332. The proposed project area is approximately 5 acres in size and consists of a parcel owned by Grenada Manufacturing, LLC and an adjacent parcel owned by Mr. Julian S. Kirk.

Soils, vegetation, and hydrology characteristics of the areas studied are outlined in the following sections. The potentially regulated wetlands or "waters of the U.S." are discussed in the conclusions section of this report. The location and approximate boundaries of each of these areas are highlighted on Figure 4. Existing site conditions, identified wetlands, and other potentially jurisdictional areas are described below. Several areas over which Brown and Caldwell believes the USACE will not take jurisdiction are also discussed. These areas include a treatment pond and an outfall ditch.

Treatment Pond

A treatment pond occurs on Grenada Manufacturing's property. The pond appears to have been constructed in an upland area and does not receive its hydrology from a "water of the U.S." or "waters of the state," but rather from wastewater treatment discharges. On the U.S.G.S. map, Figure 1, it is labeled as "Sewage Disposal Ponds."

Soils. The soils in the study area are predominantly upland soils.

Vegetation. There are some areas of willows and other wetland vegetation growing in the pond. The banks of the pond are covered by rock rip-rap and do not provide any wildlife habitat value.

Hydrology. It appears that the pond receives its hydrology from wastewater treatment effluent that is directed to the pond and incident precipitation.

Conclusions – Treatment Pond. Based on the field delineation, Brown and Caldwell believes that the existing treatment pond is not jurisdictional because it was constructed in an upland area, and therefore, the USACE will not consider this area jurisdictional.

Existing Outfall Ditch

An existing outfall ditch extends from the manufacturing plant southeast of Route 332 to an outfall on Riverdale Creek. This ditch is clearly a manmade ditch that was constructed in an upland area. The ditch conveys effluent to Riverdale Creek. This outfall is permitted by

NDPES Permit # MS0000671. On the site map, Figure 2, this area is highlighted and labeled.

Soils. The soils in the study area are predominately upland soils.

Vegetation. There are no areas of wetland vegetation within the ditch. The banks of the ditch are very steep and do not provide any wildlife habitat value.

Hydrology. It appears that the ditch receives its hydrology from wastewater treatment effluent from the Grenada Manufacturing plant and from stormwater runoff.

Conclusions – Existing Outfall Ditch. Based on the field delineation, Brown and Caldwell believes that the existing outfall ditch will not be considered jurisdictional by the USACE because it was constructed in an upland area and does not support wetland vegetation.

Wetland Areas

The areas identified as Wetlands, on Figure 4, are identified by NWI maps as forested wetland with a permanent water regime. Portions of this wetland area are located on Grenada Manufacturing property, although the majority of this wetland occurs on the adjacent property. The size of this wetland is approximately 16.5 acres.

Soils. The soils found during the site visit in the wetland areas ranged from a silty clay loam to a heavy clay soil. The hydric indicators observed included a low chroma with mottling. Upland area soils were a loamy sand to clay loam that had no evidence of hydric indicators, and had a chroma of 2 or greater with no mottling.

Vegetation. The overstory vegetation of the wetland areas consisted of swamp oak, sweetgum, and sugar maple. The understory vegetation included: golden rod, sedges, curly dock, asters, spike rush, and reed canary grass.

Hydrology. The area appears to receive its wetland hydrology from groundwater flow from an upstream location. There is a large wetland complex to the southeast of Route 332, which appears to be hydrologically connected to this wetland. The area may also receive some water from Riverdale Creek. Field observations included saturated soils from 0 to 18 inches in depth and depth to water at 0 to 6 inches.

Conclusions – Wetland Area. Based on the field delineation, we have identified approximately 16.5 acres of wetlands. Brown and Caldwell believes that the USACE will consider this area jurisdictional.

Upland Areas

The area northeast of the existing outfall ditch and the northern-most property boundary are upland areas. There is an old railroad berm, as identified on Figure 2, which is also an upland area.

PERMITTING STRATEGY

It appears that the proposed groundwater Interim Measures work at the Grenada site, which will impact approximately 3 acres of wetland, will be eligible for permitting under Nationwide Permit #38. Below is a description of Nationwide Permit #38 and its requirements.

> 38. *Cleanup of Hazardous and Toxic Waste.* Specific activities required to effect the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority provided the permittee notifies the District Engineer in accordance with the "Notification" General Condition. For discharges in special aquatic sites, including wetlands, the notification must also include a delineation of affected special aquatic sites, including wetlands. Court ordered remedial action plans or related settlements are also authorized by this NWP. This NWP does not authorize the establishment of new disposal sites or the expansion of existing sites used for the disposal of hazardous or toxic waste. (Federal Register/Vol. 67, No. 10/Tuesday, January 15, 2002/Notices–Issuance of Nationwide Permits.)

NEXT STEPS

Under Nationwide Permit #38 conditions, the USACE will be notified in accordance with the Notification Requirements. Brown and Caldwell plans to submit a Preconstruction Notification (PCN) to the USACE as soon as possible. The work will not be commenced until Brown and Caldwell is notified in writing by the District Engineer that the activity may proceed under the NWP.

The notification will be prepared by Brown and Caldwell and will include:

(1) Name, address and telephone numbers of the prospective permittee.
(2) Location of the proposed project .

(3) Brief description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), Regional General Permit(s), or Individual Permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. Sketches will be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.).

(4) For NWPs 7, 12, 14, 18, 21, 34, **38,** 39, 41, 42, and 43, the PCN must also include a delineation of affected special aquatic sites, including wetlands, vegetated shallows (e.g., submerged aquatic vegetation, seagrass beds), and riffle and pool complexes.

CONCLUSION

Based on the field observations, wetlands occur in the project site, as identified on Figure 4.

In addition to this wetland delineation report, Brown and Caldwell plans to submit a Nationwide Permit #38 application and PCN to the USACE for confirmation and a jurisdictional determination. At USEPA's request, a field survey will be conducted prior to beginning construction of the Interim Measure to confirm the findings of the desktop study that threatened and endangered species do not exist in the area of the Grenada Manufacturing facility.

Please call Dale Showers at 615-250-1241, if you have any questions or require additional information.

cc: Narindar Kumar, USEPA
Don Webster, USEPA
Louis Crawford, MDEQ
John Bozick, ArvinMeritor, Inc.
Don Williams, Grenada Manufacturing, LLC.
John Devic, Collins and Aikman
Jeffrey M. Karp, Esq., Swidler Berlin Shereff Friedman, LLP

2000 0 2000 4000

SCALE FEET

SOURCE: U.S.G.S. TOPOGRAPHIC MAP, GRENADA, MISSISSIPPI

FIGURE 1

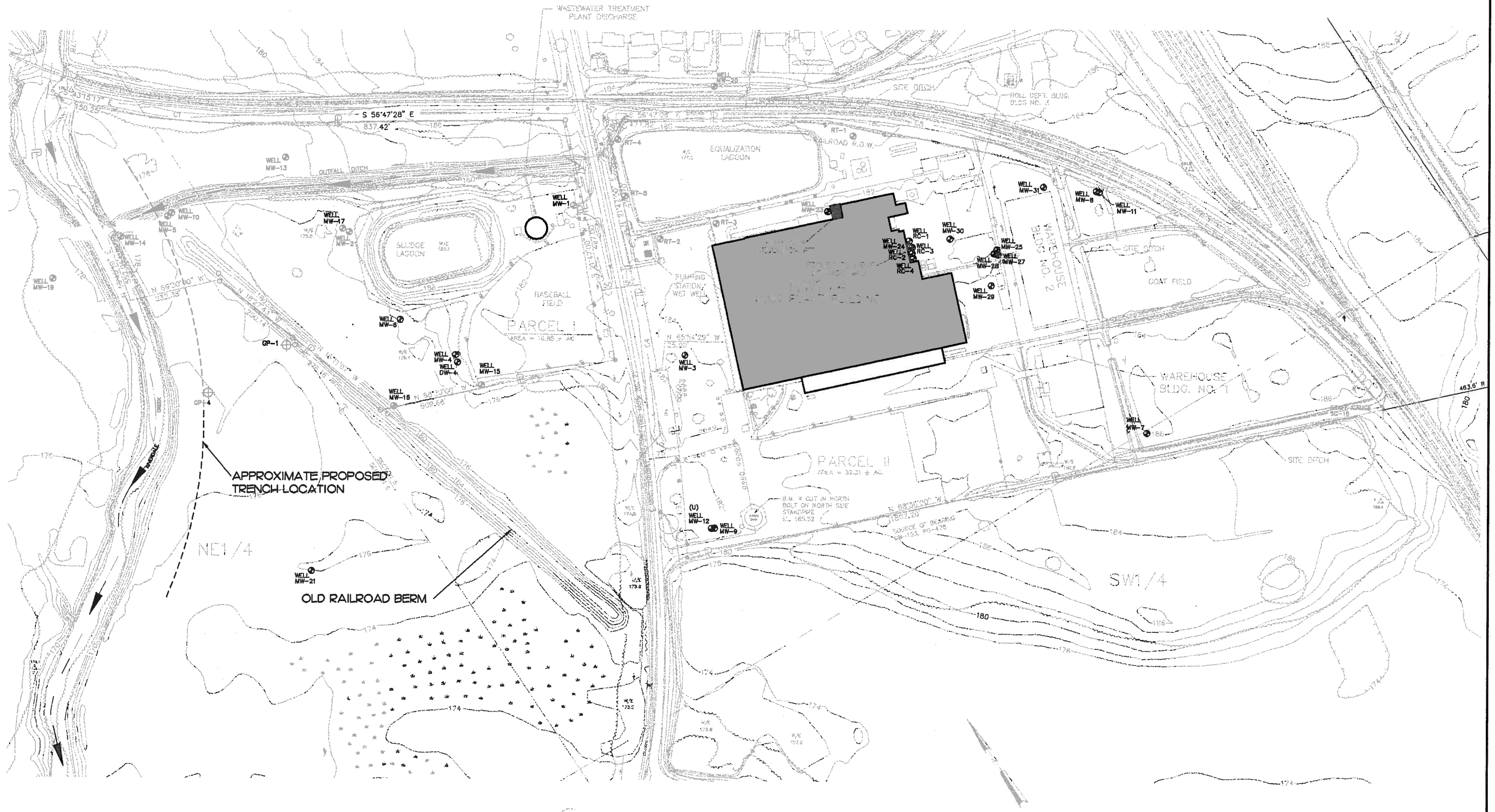
SITE VICINITY MAP

GRENADA MANUFACTURING, LLC PLANT
GRENADA, MISSISSIPPI

19071.001 7/02

BROWN AND CALDWELL Nashville, Tennessee

DRAWING NO.: 19071-001 DATE: 07/24/02 PLOT SCALE 1=1



LEGEND

- Monitoring Well
- Geoprobe Piezometer
- Surface Water Flow Direction

250 0 250 500
SCALE FEET

SOURCE: MAP PREPARED BY ALMON ASSOCIATES, 1993. WELL LOCATIONS SHOWN ARE APPROXIMATE.

DRAWING NO.: 19071-002 DATE: 07/24/02 PLOT SCALE 1=250

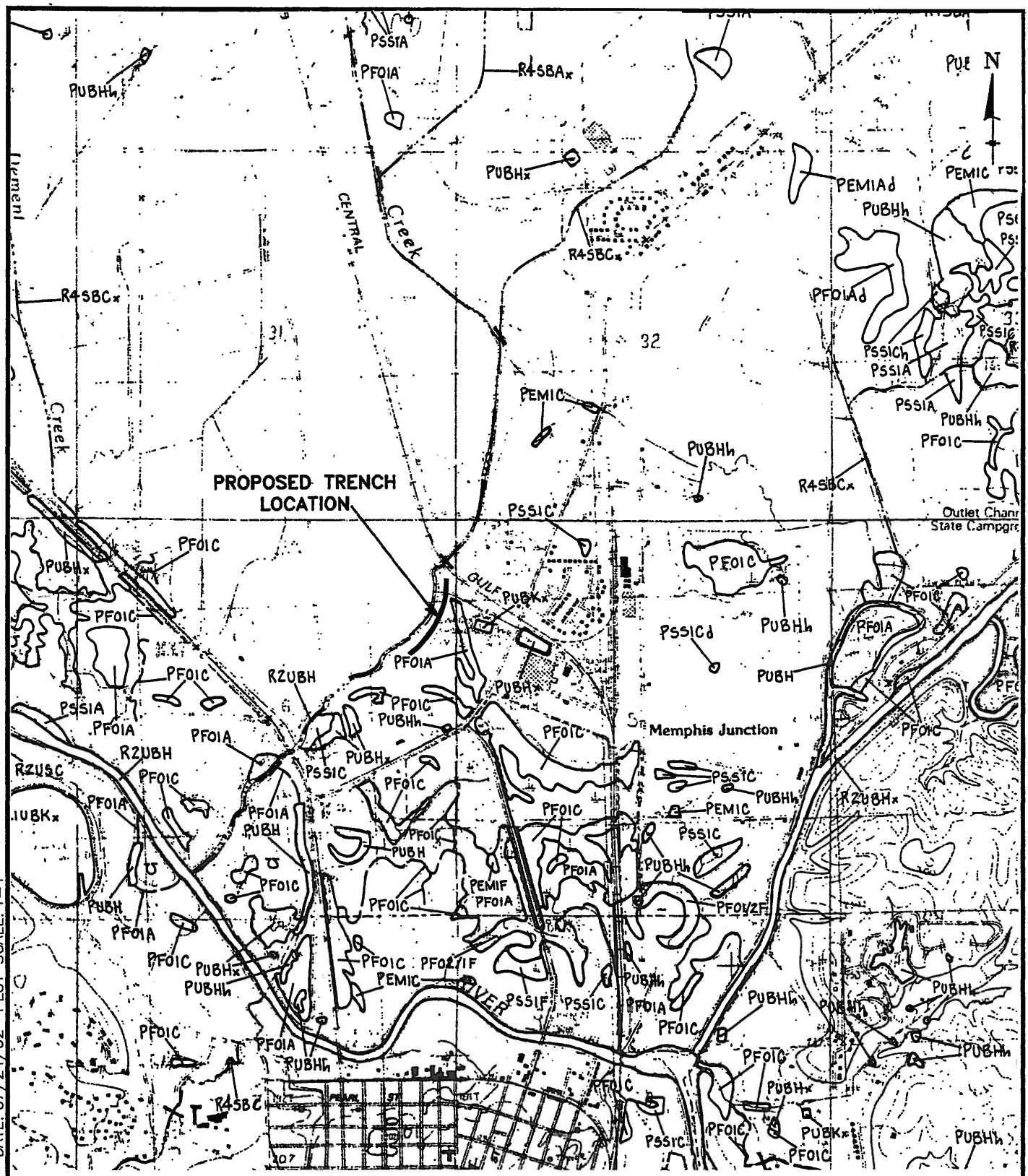
FIGURE 2

SITE MAP

GRENADA MANUFACTURING, LLC PLANT
GRENADA, MISSISSIPPI

19071.001 07/2002

BROWN AND CALDWELL Nashville, Tennessee



2000 0 2000 4000

SCALE FEET

SOURCE: NATIONAL WETLANDS INVENTORY MAP, GRENADA, MISSISSIPPI

FIGURE 3

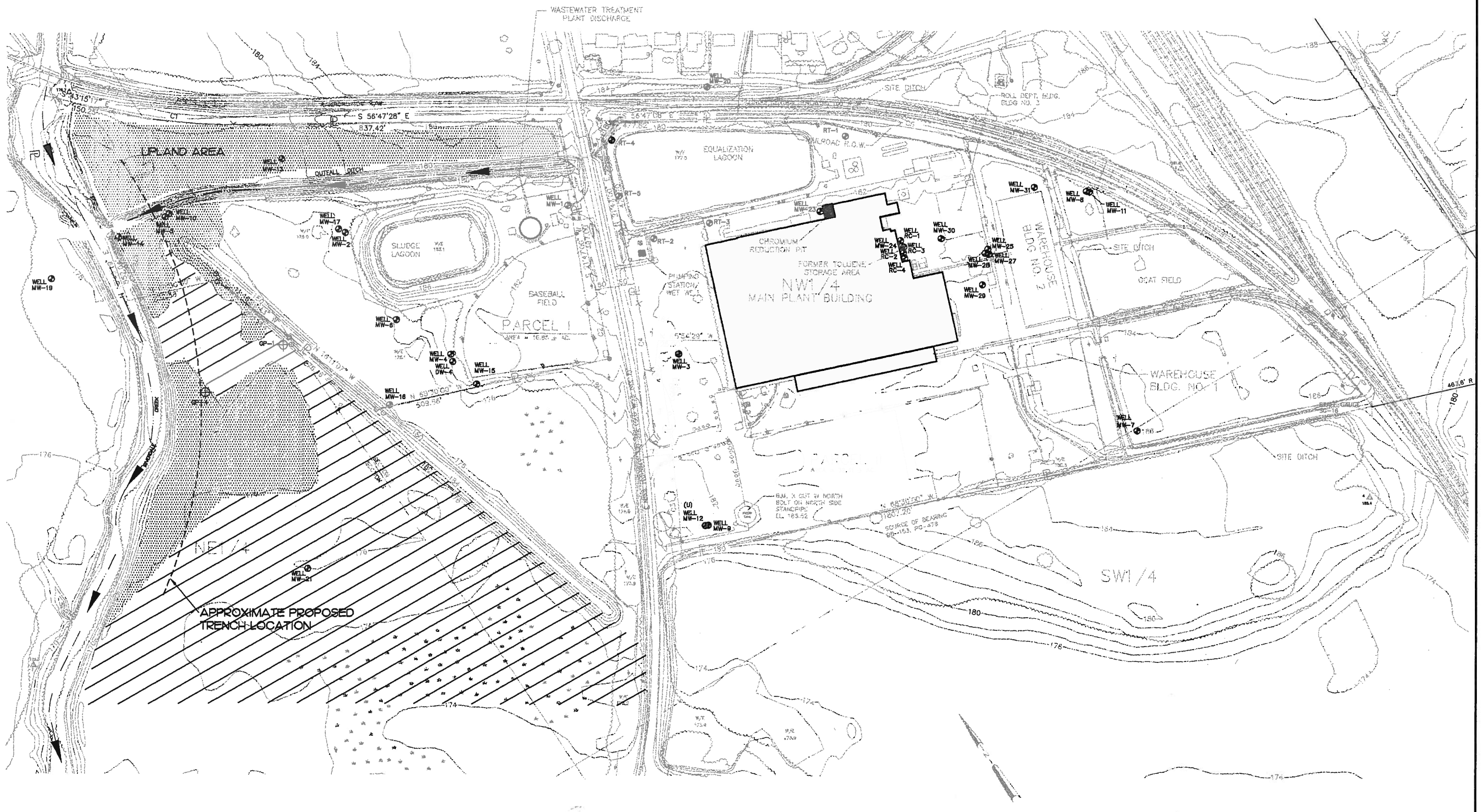
NATIONAL WETLANDS INVENTORY MAP WITH APPROXIMATE LOCATION OF PROPOSED TRENCH

GRENADA MANUFACTURING, LLC PLANT
GRENADA, MISSISSIPPI

19071.001 07/02

BROWN AND CALDWELL Nashville, Tennessee

DRAWING NO.: 19071-003 DATE: 07/24/02 PLOT SCALE: 1=1



LEGEND

- Monitoring Well
- Geoprobe Piezometer
- Surface Water Flow Direction
- Wetlands Area
- Uplands Area

SOURCE: MAP PREPARED BY ALMON ASSOCIATES, 1993. WELL LOCATIONS SHOWN ARE APPROXIMATE.

250 0 250 500
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FIGURE 4

WETLANDS AREAS

GRENADA MANUFACTURING, LLC PLANT
GRENADA, MISSISSIPPI

19071.001 07/02

BROWN AND CALDWELL Nashville, Tennessee

DRAWING NO.: 19071-004 DATE: 07/23/02 PLOT SCALE 1=250